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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,974	12/11/2001	Ming-Chang Liu	80398.P467	6368

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EXAMINER

SENGI, BEHROOZ M

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,974

Applicant(s)

LIU ET AL.

Examiner

Behrooz Senfi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-25 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-25 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The indicated allowability of claims 4 – 7, 14 – 17, 20 – 23 and 26 is withdrawn in view of the more carefully reviewing the Smolenski (US 6,058,140) and Iwasaki et al (US 5,892,550) patent. Therefore, the previous rejection (mailed 12/05/2005) is withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 2, 4 - 7, 9, 11 – 12, 14 – 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smolenski (US 6,058,140).

Regarding claims 1 and 24, Smolenski '140 teaches, a method and apparatus for identifying repeated fields in a video sequence, (i.e. fig. 7, abstract, col. 5, lines 24 - 30), and determining a first set and a second set and a third set of motion vectors from fields of same polarity in first, second and third input video frames of video sequence, the frames comprising first and second fields (figs. 4a – 4b and fig. 7, motion estimation unit 605, col. 3, lines 7 – 9, col. 4, lines 49 - 52 “each interlaced frame includes odd and even fields” and lines 65 – col. 4, lines 33, that determines a set of field MVs, Note that, input video frames are in sequence (therefore, it covers first, second and third video frames) and identifying a repeated field by comparing the sets of the MVs to a first

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threshold (fig. 6, 605, col. 3, lines 7 – 9 a frame have an even field and an odd field and comparison, unit 605 between the frames (interlaced frames, which includes two fields) is done, as noted in, col. 3, lines 12 - 25, also col. 4, lines 1 – 18 and lines 40 – 51), and sums of magnitudes of MVs in two sets (col. 4, lines 26 – 38) note; comparison of the sets of MVs between the fields of the frames, includes the third set of MV's, since the comparison is between the video frames, and the input video frames are in sequence.

Smolenski '140 reference teaches comparison of the MV's with threshold as discussed in the above. But is silence in regards to explicit of the comparison of the "ratio" of the MVs.

However, examiner takes Official Notice to note that, the MV,s as shown in figs. 4A – 4B are the same, therefore the ratio~~ff~~ would be one, which meets the limitations as claimed.

Regarding claim 2 and 25, Smolenski '140 teaches, "first set of motion vectors is between the first field of the first frame and the first field of the second frame and the second set of motion vectors is between the second field of the first frame and the second field of the second frame" (video frames comprises of two video fields, and the motion vectors are between the video fields, of the first field of the first frame and the first field of the second frame and so on, col. 3, lines 7 - col. 4, lines 33 of Smolenski).

Regarding claims 4 - 5, the limitations "comparing a first ratio of the first set of MVs and the second set of MVs to the first threshold, comparing a second ratio of the first set of MVs and the third set of MVs to the first threshold and identifying a repeated field if the first and the second ratio are less than the threshold" as claimed, is actually

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comparison of the ratio of MVs to the threshold to determine the repeated field, which have been analyzed and rejected with respect to claim 1 above.

Regarding claim 6, the limitations claimed are substantially similar to claim 1, therefore the ground for rejecting claim 1 also applies here.

Regarding claim 7, the limitations claimed are substantially similar to claim 5, therefore the ground for rejecting claim 5 also applies here.

Regarding claim 9, Smolenski '140 is silence in regards to, replacing the repeated field with a reference to a field from which the repeated field is repeated.

Examiner takes Official Notice to note that, the above claim limitations consider as "indirect addressing", which is well known in the prior art of the record. Therefore, it would have been obvious to one skill in the art at the time of the invention was made to implement such teaching to identify duplicate field.

Regarding claim 11, the limitations claimed have been analyzed and rejected with respect to claims 1 and 24.

Regarding claims 12 and 19, the limitations claimed have been analyzed and rejected with respect to claim 9 above.1 and 24.

Regarding claim 14, the limitations, wherein the first set of MVs is between the first field of the first frame and the first field of the second frame, and the third set of MVs is between the first field of the second frame and the first field of the third frame, as claimed would have been obvious over the teaching of Smolenski.

Regarding claims 15 – 17, the limitations claimed are substantially similar to claims 5 and 14, therefore the ground for rejecting claims 5 and 14 also applies here.

Regarding claims 18 and 20, the limitations claimed, are computer program instructions of claim 1, wherein, when executed by a processor cause the processor to perform method of claim 1, therefore the ground for rejecting claim 1 also applies here. Since 3:2 pull-down process illustrated in fig. 7 of Smolenski, is computer implemented and the software or programs to carry out the instructions would have been necessitated by the system.

Regarding claims 21 - 23, the limitations claimed, are computer program instructions of claims 5 and 16, wherein, when executed by a processor cause the processor to carry out the process, therefore the ground for rejecting claim 5 also applies here. Since 3:2 pull-down process illustrated in fig. 7 of Smolenski, is computer implemented and the software or programs to carry out the instructions would have been necessitated by the system.

Regarding claim 27, the limitations claimed have been analyzed and rejected with respect to claims 9 and 10 above.

4. Claims 8, 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smolenski '140 in view of Rao et al (US 6,041,142).

Regarding claim 8, Smolenski '140 teaches, identifying repeated fields in a video sequence and determining set of motion vectors from input video frames, as discussed with respect to claim 1.

Smolenski '140 is silent in regards to; threshold is a heuristically determined value.

However, such features are well known and used in the prior art of the record as evidenced by Rao '142 (i.e. figs. 8b – 8c, col. 8, lines 1 – 11), wherein teaches heuristic threshold value based on the desired condition.

Taking the combined teaching of Smolenski '140 and Rao '142 as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to modify the thresholding process of Smolenski with a heuristically determined value threshold as taught by Rao '142, for identifying a repeated field more accurately based on the desired condition.

Regarding claim 10, combination of Smolenski '140 and Rao '142 teach, averaging the repeated field, (i.e. col. 64, lines 61 – 66 of Rao).

Regarding claim 13, the limitations claimed have been analyzed and rejected with respect to claim 10.

Contact

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(571) 272-7339**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mehrdad Dastouri** can be reached on **(571) 272-7418**.

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, Va. 22314.

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Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is **(571) 272-6000**,

Or faxed to:

(571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

B.M.S.

Mehrdad Dastouri
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SUPERVISORY PATENT EXAMINER
TC 2600